CLAIMS

1. An electromagnetic noise suppressor comprising:

a base material containing a binding agent, and

a composite layer consisting of the binding agent that is a part of the base material and a magnetic material, that are integrated with each other.

2. The electromagnetic noise suppressor according to claim 1, wherein the composite layer is formed by physically vapor-depositing the magnetic material onto the surface of the base material.

3. The electromagnetic noise suppressor according to claim 1, wherein maximum transmission attenuation of electromagnetic radiation per unit thickness of the composite layer is in a range from -0.5 to -500 dB/μm.

4. The electromagnetic noise suppressor according to claim 3, wherein maximum transmission attenuation of electromagnetic radiation is in a range from -10 to -50 dB.

5. The electromagnetic noise suppressor according to claim 3, wherein the maximum reflection attenuation at the frequency where maximum transmission attenuation of electromagnetic radiation is achieved is in a range from -6 to -50 dB.

6. The electromagnetic noise suppressor according to claim 1, wherein power loss at 1 GHz is in a range from 0.3 to 0.65.

7. The electromagnetic noise suppressor according to claim 1, wherein the thickness of the composite layer is in a range

from 0.005 to 20 μm.

8. The electromagnetic noise suppressor according to claim 1, wherein the thickness of the composite layer is in a range from 0.005 to 3 μm.

9. The electromagnetic noise suppressor according to claim 1, wherein the thickness of the composite layer is in a range from 0.005 to 1 μm.

10. The electromagnetic noise suppressor according to claim 1 wherein, the thickness of the composite layer is in a range from 0.005 to 0.3 μm.

11. The electromagnetic noise suppressor according to claim 1, wherein a specific gravity is in a range from 0.9 to 1.5.

12. An electromagnetic noise suppressor comprising a plurality of the electromagnetic noise suppressors of claim 1 stacked one on another.

13. The electromagnetic noise suppressor according to claim 1, wherein the binding agent is a resin or a rubber.

14. The electromagnetic noise suppressor according to claim 2, wherein the binding agent is a hardening resin.

15. The electromagnetic noise suppressor according to claim 2, wherein elastic modulus in shear of the binding agent is in a range from 1×10^4 to 1×10^{10} Pa.

16. The electromagnetic noise suppressor according to claim

2, wherein elastic modulus in shear of the binding agent is in a range from 1×10^4 to 5×10^7 Pa.

17. The electromagnetic noise suppressor according to claim 1, further comprising: a heat conduction layer containing a thermally conductive filler.

18. The electromagnetic noise suppressor according to claim 1, further comprising: a support layer.

19. The electromagnetic noise suppressor according to claim 1, wherein the base material contains a non-halogen and non-antimony flame retarding agent.

20. The electromagnetic noise suppressor according to claim 1, further comprising: a flame retarding resin layer.

21. The electromagnetic noise suppressor according to claim 1, wherein the base material contains an electrically conductive filler.

22. The electromagnetic noise suppressor according to claim 21, wherein the electrically conductive filler is at least one kind of electrically conductive fine powder selected from the group consisting of metal powder, metal fiber, metal-coated fine particles, fine carbon particles and carbon nano-tube.

23. The electromagnetic noise suppressor according to claim 1, further comprising: an electrically conductive layer.

24. The electromagnetic noise suppressor according to claim

23, wherein the electrically conductive layer is at least one kind selected from the group consisting of metal foil, fabric of metal fibers, fabric of electrically conductive fibers, interlaced metal wires, interlaced electrically conductive fibers, organic polymer layer containing an electrically conductive filling agent dispersed therein and electrically conductive film.

25. The electromagnetic noise suppressor according to claim 24, wherein the electrically conductive film comprises a support film and a metal layer having a thickness from 5 to 500 nm formed by physical deposition of a metal on the support film.

26. The electromagnetic noise suppressor according to claim 25, wherein the metal layer is formed by opposing target type magnetron sputtering process.

27. The electromagnetic noise suppressor according to claim 1, wherein the base material contains a dielectric material powder.

28. The electromagnetic noise suppressor according to claim 27, wherein the dielectric material powder is at least one kind selected from the group consisting of barium titanate-based ceramic, zirconium titanate-based ceramic and lead perovskite-based ceramic.

29. A method of manufacturing an electromagnetic noise suppressor, which comprising:

a vapor deposition process of physically vapor-depositing a magnetic material onto the surface of a base

material containing a binding agent to form a composite layer on the surface of the base material.

30. The method of manufacturing an electromagnetic noise suppressor according to claim 29, wherein the magnetic material is deposited on the surface of the base material containing the binding agent by physical vapor deposition of opposing target type magnetron sputtering process.

31. The method of manufacturing the electromagnetic noise suppressor according to claim 29, wherein the magnetic material is deposited on the surface of the base material containing the binding agent by physical vapor deposition with particle energy of 5 to 1000 eV.

32. The method of manufacturing the electromagnetic noise suppressor according to claim 29, wherein the amount of the magnetic material deposited is in a range from 0.5 to 200 nm in terms of equivalent thickness of the magnetic material film.

33. A method of manufacturing an electromagnetic noise suppressor, which comprises:

a stack fabricating process of fabricating a stack by stacking other layers on a base material containing a binding agent, and

a vapor deposition process of physically vapor-depositing a magnetic material onto the surface of the base material containing a binding agent to form a composite layer on the surface of the base material.

34. An article with an electromagnetic noise suppressing

function wherein at least a part of the surface of the article is covered by the electromagnetic noise suppressor of claim 1.

35. The article with an electromagnetic noise suppressing function of claim 34, wherein the article is an electronic component.

36. The article with an electromagnetic noise suppressing function according to claim 34, wherein the article is a printed wiring board on which electronic components are mounted.

37. The article with an electromagnetic noise suppressing function according to claim 36, wherein the printed wiring board is a flexible printed wiring board.

38. The article with an electromagnetic noise suppressing function according to claim 34, wherein the article is an electric connector.

39. The article with an electromagnetic noise suppressing function according to claim 38, wherein the electric connector is a flexible connector.

40. The article with an electromagnetic noise suppressing function according to claim 34, wherein the article is a flat cable.

41. The article with an electromagnetic noise suppressing function according to claim 34, wherein the article is a key top member for pushbutton switch.

42. The article with an electromagnetic noise suppressing function according to claim 34, wherein the article is an insert sheet for a preform.

43. The article with an electromagnetic noise suppressing function according to claim 34, wherein the article is a semiconductor integrated circuit.

44. A method of manufacturing an article with an electromagnetic noise suppressing function, which comprises:

a coating process of coating at least a part of the article with a base material containing a binding agent, and

a vapor deposition process of physically vapor-depositing a magnetic material onto the surface of a base material containing a binding agent to form a composite layer on the surface of the base material